



CAB-129-A

PATENT APPLICATION

Marked Up Copy of Specification Showing Changes

**DEVICE FOR SUSPENDING LENSES INTENDED MORE PARTICULARLY TO OPTICAL LENSES PROCESSING**

**BACKGROUND OF THE INVENTION**

1. Field of the Invention:

[0001] The purpose of this invention is a glass holder device, which is particularly intended to the treatment of optical glass lenses or other substrates.

2. Description of the Prior Art:

[0002] In the area of optical glass lenses treatment, assisted by glass holder devices, optical glass is subjected to various cleaning treatments and/or of liquid application. The aforementioned glass holder devices consist of a frame provided with at least a horizontal bar and metal grips suspended one behind the other to the aforementioned bar and steadily welded to the latter in prevention of the falling of the grips, especially during the device transportation or while performing this treatment. Each grip carries an optical glass lens which is maintained on the aforementioned grip, in position appreciably parallel to the axis of the metal rod forming the body of the grip, by means of two lever-arms flexibly recalled one towards the other and clutching and tightening the aforementioned glass lens between their two free ends by pinching its peripheral edge and a stop on which the aforementioned glass rests.

[0003] The control operations of optical glasses are carried out by removing the aforementioned glasses directly from the glass holder grips with the fingers which causes scratching of the aforementioned glasses or leaving finger prints which will be built up on the glass especially during its polymerization.

[0004] Besides the fact of their monolithic configuration, existing glass holder devices show a significant blocking volume, which does not allow reduced volume storage. Otherwise, the existing glass holder grips are not adapted to receiving optical glass of varied sizes and particularly thick or very thin glass.

### **BRIEF SUMMARY OF THE INVENTION**

[0005] The goal of this invention is to remedy these disadvantages by offering a universal glass holder device which makes possible dismounting the glass holder grips easily while ensuring their blocking in free rotation around the bar of the frame in the suspension position.

[0006] According to this invention, the glass holder device is ~~more~~ particularly intended for optical glass treatment or other substrates and ~~is made of~~ includes a frame ~~comprising at least~~ and a horizontal bar of cylindrical shape supported on the frame and supporting the glass holder grips and is ~~primarily~~ characterized ~~by the fact in that on one hand, a~~ the glass holder grip is made of a comprises an axially elongated center rod forming the body of the grip and having ~~on one~~ at an upper end portion thereof hanging means ~~allowing to join in a removable way the aforementioned grips for removably suspending the glass holder grip to the~~

aforementioned bar, one ~~behind~~ next to the other on evenly spaced positions and locking means for preventing free rotation of the aforementioned grip around the bar, and ~~on the other hand, holding in place means for the glass~~ at a lower end portion thereof a stop for positioning the optical glass on the aforementioned grip, the aforementioned optical glass being maintained ~~appreciably~~ substantially parallel to the axis of the center rod.

[0007] The hanging means includes the center rod of the glass holder grip ~~could be being bent at one of its ends~~ the upper end portion thereof in a manner to form a an inverted downwardly open U-shaped hook for allowing ~~suspending~~ the grip to be suspended from the bar of the frame by ratcheting ~~it with its~~ the hook in a notch cut into the aforementioned bar. The hook ~~will be bent in U shape, this way it can create~~ includes two branches and a space ~~defined by two branches and~~ intended to receive the bar, which will be clutched by the two branches. The locking means includes the bottom of the notch including a rectilinear surface and one branch, adapted to be received in the notch, including a rectilinear surface that engages the bottom surface of the notch, wherein engagement between the rectilinear surfaces and one of which branches will be inserted in the notch which bottom is rectilinear to prevent prevents the glass holder grip from turning freely around the bar ~~by its contact with the aforementioned branch.~~

[0008] ~~The holding means of~~ A holder for clutching and tightly gripping the outer periphery of an optical glass ~~on a grip could be consisted~~ is mounted to the

rod, the glass holder being V-shaped and comprising two lever arms and an apex with the apex mounted to the center rod and assembled around a common swivel axis, joined to the center rod, the lever arms having free ends flexibly recalled one towards the other to clutch and to tighten the glass between their free ends by pinching its peripheral edge[.]. A lower and portion of the rod is bent at right angles to form the stop and the aforementioned optical glass rests upon the stop extending perpendicularly from the center rod of the grip.

[0009] In a preferred method of implementation the lever arms will be provided at their free end with a contact piece in the shape of blade, contained on its edge which is intended to be in contact with the peripheral edge of the glass in a round and curved cut defined by two points. The lever arms, by preference, will be implemented only in one part starting from the folded metal rod.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] The advantages and characteristics of this invention will stand out more clearly from the ~~following~~ description ~~which is referred to~~ and the attached ~~drawing drawings representing~~ drawings, which represent a non-restrictive method of its implementation.

[0011] FIG. 1 is ~~picture 1 presents~~ a perspective partial view of ~~the supporting axis for the glass holder device~~ two glass holder devices positioned relative to a horizontally disposed cylindrical bar, in accordance with this invention,

with one and the other of the holder devices, respectively, being shown removably connected to and in position for connection to the bar.

[0012] FIG. 2 is ~~picture 2 presents~~ a side-view of the glass holder grip carrying an optical glass.

### **DETAILED DESCRIPTION OF THE PREFERED EMBODIMENT**

[0013] ~~If you refer to picture 1, you can see that~~ Referring to the drawings, and in particular to FIG. 1, according to this invention, a glass holder device ~~consists of a~~ 100 comprises an axially elongated cylindrical bar 1 ~~assembled on a metal frame, not presented, including at least a bar 1 supporting the~~ for suspending glass holder grips 2. The bar 1 is disposed horizontally and adapted to be supported on a frame (not shown). A series of evenly spaced notches 10 are cut in the bar 1. The glass holder grips 2 are joined to the bar on the positions marked by the notches 10 and evenly spaced and cut in along the bar 1 in vertical side-by-side relation.

[0014] The glass holder grips 2 are ~~each intended~~ configured to hold an optical glass ~~40, 40'~~ 4, 4' (~~picture see~~ FIG. 2) or another substrate in ~~order to make it withstand no~~ a protective manner to obviate damage while subjected to various cleaning treatments or liquid application.

[0015] A glass holder grip 2 ~~is made, on one hand, of a~~ comprises an axially elongated metal center rod 20, forming the body of the grip ~~[[5]]~~ and having upper and lower end portions, and a glass holder 3 for holding and positioning the optical

glass relative to the center rod. The upper end portion of the rod 20 is bent on one end to form a an inverted downwardly open hook 21 in U shape making it possible to suspend it to the bar 1 by and the lower end portion of the rod is bent at right angles to the body to form a stop 36 that extends outwardly from the body. The hook 21 is configured to include a pair of laterally spaced branches 23 and 24 that define a slot or space 22, with the hook being adapted to receive and engage a notch 10 and connect the glass holder grip 2 to the bar by ratcheting it from its bent end 21 in the bent end or hook 21 downwardly and into engagement with the notch 10.

[0016] As seen in FIG. 1, the glass holder grip 2 (to the left) is connected to the bar 1 and the glass holder grip 2 (to the right) is positioned for downward movement, in the direction of the arrow, for engagement with a notch 10. Further, a notch at the right end of the bar is available for mounting another glass holder grip 2.

[0017] , and on the other hand, of As shown in FIG. 2, the glass holder 3 is configured to enable clutching and tightening means 3 for glass 40, 40' allowing it to stay on about the outer peripheral edge 40, 40' of the optical glass 4, 4'. The glass holder 3 pinches about the peripheral edge to hold the glass and orient the optical glass on the holder grip appreciably 2 in a manner to be substantially parallel to the rod axis 20 by pinching its peripheral edge as you can see on picture FIG. 2.

[0018] According to this invention, the notch 10 includes a bottom 11, which is rectilinear, and the branch 23 of the U-shaped hook 21 includes a notch engaging portion 12 that is rectilinear.

[0019] ~~Space~~ The U-shaped hook 21 is adapted to receive the bar 1 in the space 22 , created formed between U-shape the branches 23, 24, is intended to receive the bar 1 which. The bar 1 is clutched between a part of the branches 23, 24 of which branch 23 is inserted in the notch 10 of which bottom 11 is also rectilinear, the contact between and the two rectilinear surfaces 12 and 11, respectively, of one of the branches formed on the branch 23 and of the bottom 11 of the notch 10 , is in effect to prevent engage one another to prevent the center rod 20 from turning freely around the bar ~~2~~ 1 and from falling, especially during transportation of the support or during the evolution of the support in a sequence of treatments.

[0020] ~~You can see that~~ As can be seen from the drawings, the depth of space 22 intended to receive bar 1 between the branches 23, 24 ~~in U-shape,~~ is defined by a transverse stop 25 but provided in the U-shape internal branch 24 23, the stop 25 being interiorly of the space 22 and extending towards the opposite branch 24.

[0021] Thus, glass holder grips 2 can be easily assembled to or dismounted from the bar 1 by the simple latching of the hook 21 in one of the notches 10, and then it is possible to maintain control over the optical glass 4, 4' without touching it directly with the fingers when dismounting the glass holder grip 2 correspondingly from the frame.

[0022]        ~~You can also see on picture 2 that the~~ As can be seen in FIG. 2, the  
glass holder 3 for clutching means 3 for ~~and maintaining a tight grip about the~~  
outer periphery of the optical glass are consisted of ~~is generally V-shaped and~~  
formed by a very thin metal rod 30 that is ~~folded in the middle in ways to form two~~  
lever arms 31, 31' and a medially shaped apex. The apex of the V-shaped glass  
holder 3 is folded in a manner to form a U-shaped recess or cavity sized to fit about  
and be retained by a rivet 41 secured to the body 20 of the glass holder grip 2, the  
rivet defining a common swivel axis 42 for the two lever arms 31, 31' of the glass  
holder 3 joined at the level of its folding to body 20 of the grip 2 due to a rivet 32.  
The ~~two~~ lever arms 31, 31', respectively, terminate in a free end 32, 32' that is  
provided with a contact piece 33, 33' for engaging the optical glass 4, 4'. The arms  
31, 31' are flexibly recalled one towards the other which allows the gripping on the  
optical glass 4, 4' between the two ends 32, 32' which are free from the arms 31, 41  
31' by the mean of a contact piece 33, 33', as you can see on picture be seen in FIG.  
2.

[0023]        The contact piece 33, 33' is a metal part in the shape of blade, having  
at the end and intended to be in contact with the optical glass 4, 4' a curved cut 34,  
34' allowing holding optical glasses 4, 4' of various thicknesses.

[0024]        Curved cuts ~~44, 44'~~ 34, 34' correspondingly reveal each of the two  
points 35, 35' making it possible to hold a very thick optical glass 4' by arranging  
the peripheral edge 40 of the optical glass 4 between the points 35, 35' which in



effect, especially after varnish or other liquids application, not to be altered because of the reduced contact surface.

[0025] Very thin optical glasses 4' are held by arranging their peripheral edge 40' between the two points 35, ~~35~~ 35' corresponding to each cut 34, 34'.

[0026] The grips, thus obtained, allow avoiding significant liquid or varnish consumption after soaking in opposition to the current grips. In addition, according to this invention, the glass holder device allows an easy dismantling of the grips while keeping the fixed position of the grips once suspended on the bar of the frame even in case of reversal where the grips and the glasses remain in the position without falling.

In the claims:

1. The glass holder device is particularly intended to the treatment of optical glasses (4, 4') or other substrates and of the kind which consisted of a frame holding at least a horizontal bar (1) of cylindrical shape supporting the glass holder grips (2), is characterized by the fact that on one hand, a glass holder grip (2) is made of a center rod (20) forming the body of the grip and comprising at one of its ends hanging means (21, 22, 25) allowing to join in a removable way the aforementioned grips to the aforementioned bar one behind the other in evenly spaced positions (10) and locking means (23, 24, 25) preventing free rotation of the aforementioned grip (2) around the bar (1) and on the other hand, holding means (3) to position the glass on the aforementioned grip (2), the aforementioned glass (4, 4') being held appreciably parallel to the axis of the center rod (20).

2. According to claim 1, the glass holder device is characterized by the center rod (20) which is bent on one end to form a hook allowing the grip to suspend at the bar (1) by ratcheting it by its hook in the notch (10) cut in the bar (1).

3. According to claim 2, the glass holder device is characterized by the hook (21) being bent in U shape, in way to create a space (22) defined by the two branches (23, 24) of the U shape and intended to receive the bar (1) which is clutched by the two branches (23, 24) and one of which is inserted in the notch (10) which bottom (11) is rectilinear so that it can prevent the grip (2) from turning freely around the bar (1) by its contact with the aforementioned branches (23, 24).

4. According to any of the previous claims, the glass holder device is characterized by its holding means (3) of an optical glass on a grip (2) which consists of two lever arms (41, 41') assembled around a common swivel axis (42), joined to the center rod (20), flexibly recalled one towards the other to clutch and to tighten the glass between their free ends by pinching its peripheral edge (40, 40'), the aforementioned glass resting on the stop (36) and extending perpendicularly from the center rod of the grip.

5. According to claim 4, the glass holder device is characterized by the lever arms (41, 41') which are provided at their free end with a contact piece (43, 43') in the shape of blade contained on its edge and intended to be in contact with the peripheral edge (40, 40') of the glass (4, 4'), a round and curved cut (44, 44') defined by two points (45, 45').

6. The glass holder device is characterized by the lever arms (41, 41') being carried out only in one piece starting from the folded metal rod.

### Summary-ABSTRACT

The A glass holder device is ~~particularly intended~~ for treatment of optical glasses (4, 4') or other substrates ~~and of the kind having a frame which comprises of~~ at least a horizontal bar (1) of cylindrical shape supporting the horizontally supports an elongated bar (1) with evenly spaced notches (10) on a frame and suspends glass holder grips (2) in parallel side-by-side vertical relation. ~~On one hand, the~~ The glass holder grip is made of a center (2) comprises an axially elongated rod (20) forming, that forms the body of the grip (2) and comprising at one of its ends, and holding means (3, 31, 31') connected to the grip body (20) for clutching the outer periphery (40, 40') of the optical glass (4, 4') and holding the glass generally parallel with the lower end portion of and adjacent to a stop (36) bent outwardly from the body (20) for supporting the glass. The upper end portion of the rod (20) includes hanging means (21, 22, 25) allowing to join in a removable way the aforementioned grips to the aforementioned bar one behind the other on evenly spaced positions (10) for removably connecting the grip to the bar (1) and locking means (11, 23, 24 12, 25) for preventing free rotation of the aforementioned grip (2) around the bar (1) and on the other hand, holding means (3) to position the glass on the aforementioned grip (2), the aforementioned glass (4, 4') being held appreciably parallel to the axis of the center rod (20).